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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,335	07/10/2003	San-Jung Lee	DEE-PT122	2737
3624	7590	12/01/2004	EXAMINER	
VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			TRAN, THUY V	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/617,335

Applicant(s)

LEE ET AL.

Examiner

Thuy V. Tran

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment submitted 09/20/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/10/03 & 9/20/04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This is a response to the Applicants' amendment submitted on 09/20/2004. In virtue of this amendment, claim 5 is canceled; and thus, claims 1-4 and 6-10 are now presented in the instant application.

Drawings Objections

1. The proposed corrected drawing Figure 4 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it includes the following reference character(s) not mentioned in the description: R1, R2, and the three capacitors connected to the lamp and the inverter. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Applicants are noted that the submission of the corrected drawings must be in compliance with 37 CFR 1.121 for consideration.

Claim Objections/ Minor Informalities

2. Claims 2 and 7-8 are objected to because of the following informalities:

Claim 2, line 1, "claim1" should be changed to --claim 1--;

Art Unit: 2821

Claim 7, line 2, "consists of" should be changed to --comprises--; and

Claim 8, line 2, "consists of" should be changed to --comprising--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trestman (U.S. Patent No. 6,680,585) in view of Spira et al. (U.S. Patent No. 3,731,142).

With respect to claim 1, Trestman discloses, in Fig. 3, a frequency-modulated dimming control system of a discharge lamp [5] comprising a ballast circuit [4,...,6; C1,...,C5; R1,...,R6] for driving the discharge lamp [5] by detecting a variation of a bus voltage [DC bus] and then providing a current to the discharge lamp [5] in response to a frequency modulation of the ballast circuit and the variation of the bus voltage so as to control a light intensity of the discharge lamp

Art Unit: 2821

[5]; the ballast circuit comprises (i) a rectifier [2] for rectifying the bus voltage [V_{bus}], (ii) a voltage converter [R1, R2, R3, R5, C3, V_{ref} , EA] for detecting the variation of the bus voltage and amplifying the variation to produce a dimming signal (outputted from EA and into control circuit; see Fig. 3), and (iii) a control integrated circuit [control circuit] (see col. 5, lines 25-26) for controlling an output of the discharge lamp [5] according to the dimming signal. Trestman does not disclose a voltage regulator included the system having a variable output voltage for converting an input voltage into a bus voltage, wherein a level of the bus voltage is a predetermined ratio of the input voltage.

Spira et al. discloses, in Fig. 13, a frequency-modulated dimming control system of a discharge lamp comprising a voltage regulator [82, 83] included the system having a variable output voltage (from 0 to 140 volts; see col. 6, line 35) for converting an input voltage (from terminals 80, 81) into a bus voltage (which goes to rectifier [84]; see Fig. 13), wherein a level of the bus voltage is a predetermined ratio of the input voltage (see col. 6, lines 32-40).

It would have been obvious to one of ordinary skills in the art at the time of the invention to implement the system of Trestman by additionally configuring at the input of the system of Trestman a voltage regulator as taught by Spira et al. so as to facilitate the control of the input power source since Spira et al. teaches that such an arrangement of the voltage regulator can provide a desired output (see col. 6, lines 32-36).

With respect to claim 2, Trestman discloses that the input voltage is an AC line voltage (see Fig. 3).

With respect to claim 3, the combination of Trestman and Spira et al. (Fig. 13 of Spira et al.) disclose that the voltage regulator [82, 83] is a transformer (which is one of a power supply and a transformer as claimed).

With respect to claim 4, the combination of Trestman and Spira et al. disclose that the voltage predetermined ratio is within 10% (ranging from 0 to 140 volts; see col. 6, lines 32-36)

With respect to claim 6, Trestman discloses that the rectifier is a bridge circuit, which consists of four rectifier diodes (see col. 4, lines 25-26).

With respect to claim 7, Trestman discloses, in Fig. 3, that the voltage converter comprises an operational amplifier [EA].

With respect to claim 8, Trestman discloses, in Fig. 3, that the system further comprises an inverter [4] comprising switches [S1, S2], wherein the inverter is controlled by the control integrated circuit, connected between the rectifier and the discharge lamp and adjustably providing a current to the discharge lamp by altering a frequency (see col. 6, lines 56-58).

With respect to claim 9, Trestman discloses, in Fig. 3, that the switch [S1, s2] is a Metal-Oxide-Semiconductor Field Effect Transistor (MOSFET).

With respect to claim 10, Trestman discloses, in Fig. 3, that the system further comprises an induction device [T1] connected between the inverter [S1, S2] and the discharge lamp [5] for receiving energy from the inverter [S1, s2] when the switch is OFF and providing the energy to the discharge lamp.

Citation of relevant prior art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2821

Prior art Lee (U.S. Patent No. 5,786,671) discloses an electronic ballast system.

Prior art Stolz (U.S. Patent No. 4,251,752) discloses a solid-state electronic ballast system.

Remarks and conclusion

7. Applicant's arguments with respect to amended claim 1 have been considered but are moot in view of the new ground(s) of rejection (as recited in details in "Claim Rejections under 35 USC § 103" set forth in this Office Action).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

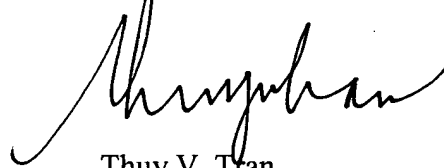
Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

Art Unit: 2821

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thuy V. Tran', is positioned above the printed name and title.

Thuy V. Tran
Primary Examiner
Art Unit 2821

11/27/2004